

AUTOMOTIVE

Jaguar Land Rover proceeds with testing connected and autonomous technology

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Jaguar Land Rover Roadwork Assist

By FORREST CARDAMENIS

British automaker Jaguar Land Rover is beginning real-world testing for autonomous vehicles.

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Over the next four years, the automaker plans to have a fleet of more than 100 research automobiles for development and testing of Connected and Autonomous Vehicle technologies. The announcement comes immediately after the company detailed plans for all-terrain autonomous driving ([see story](#)), signaling the urgency of the goal.

"Our connected and automated technology could help improve traffic flow, cut congestion and reduce the potential for accidents," said Tony Harper, head of research for Jaguar Land Rover. "We will also improve the driving experience, with drivers able to choose how much support and assistance they need. In traffic, for example, the driver could choose autonomy assist during tedious or stressful parts of the journey.

"Driving through congested roadworks can be a stressful experience for many people especially when the lanes narrow and switch to the other side of the road, or if road markings are faint, obscured or missing," he said. "To overcome this, our prototype system will guide the vehicle to the center of the narrow lane, reducing driver workload and stress. With further research, in the future this system could enable the car to drive autonomously through roadworks."

Connected, convenient

The first of these research cars will be driven later this year on a 41-mile test route near Coventry and Solihull, UK. Other automakers, including Audi and Tesla, are also testing autonomous capabilities in real-world situations ([see story](#)).



Jaguar Land Rover autonomous vehicle warning

Initial tests will focus on communications and connectivity. Vehicle-to-vehicle and vehicle-to-infrastructure communication technologies will allow vehicles to talk to one another and to signs and traffic lights, while data sharing between vehicles will assist with lane changes and other cooperative driving maneuvers.

While autonomous vehicles have firmly entered the public consciousness, connectivity is an underlying, less visible goal that works conjointly. For autonomous vehicles to function effectively, other vehicles on the road must obey similar sanctions regarding following distance, lane changes and speed, among others.



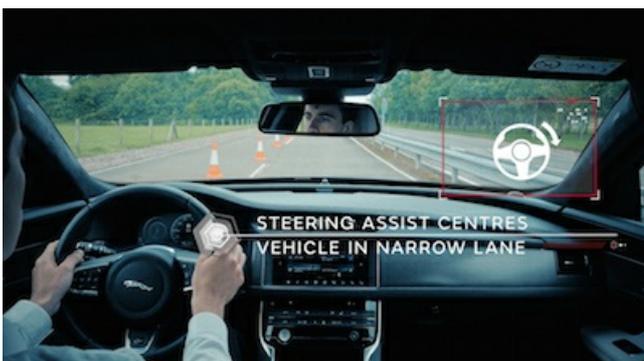
Jaguar Land Rover Safe Pullaway technology

Jaguar Land Rover is experimenting with conveying this data via radio signals as part of its "Over the Horizon Warning" technology. The tech could also warn drivers and autonomous vehicles of hazards and obstacles around blind bends.

For example, a stopped or slowed vehicle that the driver may not be able to see will communicate with nearby cars, prompting a "hazard ahead" warning from those vehicles to their drivers. Emergency sirens will similarly be detected, with the driver alerted to the exact direction of the emergency vehicle.

In addition to the Over the Horizon Warning, Jaguar Land Rover will be testing three additional technologies in particular: Roadwork Assist, Safe Pullaway and Emergency Vehicle Warning.

Emergency Vehicle Warning builds on the Over The Horizon Warning. An emergency vehicle will communicate directly with other vehicles, directing them in instances of congestion to ensure the emergency vehicle can safely and quickly pass.



Roadwork Assist Jaguar Land Rover

Roadwork Assist uses stereo cameras to generate a 3D view of the road and can recognize cones, barriers and other indications of roadwork. The system will then identify an ideal path through complicated construction sites and assist with steering when needed to ensure safe passage.

Safe Pullaway uses the same camera technology to identify walls, vehicles and other such objects directly in front of the driver's vehicle. If the system receives signals from the throttle pedal activation and senses a collision could happen, the vehicle will brake on its own and give an audible warning to the driver.



Jaguar Land Rover Safe Pullaway

The technology will assist in bumper-to-bumper traffic and when pulling out of a parking spot, among other situations.

Road to the future

Other recent Jaguar Land Rover initiatives reveal an ambition to tackle emerging and future trends head-on, embracing the sector's potential future rather than attempting to prolong the present.

For example, the company is making growth personal with an expansion and relocation of its Special Vehicle Operations and Classic divisions.

The automaker has opened a Technical Centre worth nearly \$26 million for Special Vehicle Operations (SVO), is relocating SVO's subsidiary Jaguar Land Rover Classic headquarters and has announced corresponding growth plans. As luxury's turn toward the bespoke permeates across sectors, Jaguar Land Rover is preparing for revenue increases in its corresponding business ([see story](#)).

The goal to test these technologies over the next four years puts Jaguar Land Rover into the same window as some competitors.

Automaker BMW Group is looking to put street-ready autonomous vehicles into production by 2021 with the creation of an open platform with technology partners.

BMW Group, along with collaborators Intel and Mobileye, sees the potential autonomous cars hold to make driving safer and easier, with implications for highway driving as well as ridesharing in denser city streets. While many automakers and consumers still see sophisticated self-driving vehicles as a distant dream, BMW is aiming to make them a reality sooner rather than later. ([see story](#)).

"Even when an enthusiastic driver is fully focused on enjoying the thrill of the open road, the new technology we are creating will still be working in the background to help keep them safe," Mr. Harper said. "Because the intelligent car will always be alert and is never distracted, it could guide you through road works and prevent accidents.

"If you are a keen driver, imagine being able to receive a warning that there's a hazard out of sight or around a blind bend," he said. "Whether it's a badly parked car or an ambulance heading your way, you could slow down, pass the hazard without fuss and continue on your journey."